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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,478	12/30/2004	Avigdor Bieber	P-5022-US	2656

49443 7590 09/12/2008

Pearl Cohen Zedek Latzer, LLP
1500 Broadway
12th Floor
New York, NY 10036

EXAMINER	
JOHNSON, CONNIE P	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
09/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,478	BIEBER ET AL.	
	Examiner	Art Unit	
	CONNIE P. JOHNSON	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-12 and 24-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-12 and 24-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/3/2008 has been entered.

Response to Amendment

2. The remarks and amendment filed 7/3/2008 have been entered and fully considered.

3. Claims 1-6, 8-12 and 24-26 are presented.

4. Claims 7, 13-23 and 27 are cancelled.

5. Claims 1, 3 and 5 are amended.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-6, 8-12 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teng, U.S. Patent No. 6,242,156 B1 in view of Crawford et al., U.S. Patent No. 4,430,366.

Teng teaches a lithographic printing plate comprising a substrate and a radiation-sensitive layer (abstract). The radiation-sensitive layer may be a single layer or multiple layers with different compositions (col. 5, lines 16-18). Therefore, the radiation-sensitive layers of Teng also meet the limitations of a primer layer and coating layer. Teng also teaches an overcoat layer that is non-radiation sensitive (form film). The non-radiation-sensitive overcoat layer (form film) is coated on the radiation-sensitive layer to retard oxygen inhibition and prevent surface durability (col. 5, lines 40-44). Since the overcoat layer isolates the composition from air and prevents oxygen from entering the radiation-sensitive layer, it is expected that the lack of oxygen would also reduce the UV energy required to cure the composition as in instant claim 11. Teng also teaches a polymer substrate in the printing plate composition (col. 6, line 40). The substrate may be oleophilic (ink-accepting) while, the radiation-sensitive layer comprises hydrophilic (ink-repelling) properties (col. 5, lines 8-9). The radiation-sensitive layers of Teng are also UV-absorbing as exemplified by the UV-absorbing dyes in the radiation-sensitive layers (see col. 8, lines 17-60). Specifically, leuco-crystal violet is a UV-absorbing dye (see col. 8, lines 26-27). The recitation in claim 1, “so that less laser energy is needed for ablating the laser-absorbing layer than what would be needed for ablating a laser-absorbing layer without a gradient of concentration ratios” adds no patentable weight to the claim. Teng does not teach that the radiation-sensitive layer comprises a gradient

solid dispersion of metal-metal oxide nor that the substrate comprises a polycarbonate film.

However, Crawford teaches applying aluminum-aluminum oxide compositions by vapor deposition (see example 1). Crawford also teaches varying ratios of aluminum and aluminum oxide throughout the thickness of the layer (col. 3, lines 53-65). The thickness of the layer comprising the aluminum/aluminum oxide is 50 to 5000 angstrom (col. 3, lines 2-3). This thickness meets the limitation of the range of 0.02 to 0.6 microns as in instant claim 6. Vapor deposition by definition comprises dispersing the metal/metal oxide particles in an uneven distribution throughout the layer to form a gradient dispersion. This process is usually performed by evaporation or sputtering. Therefore, the layer comprising the aluminum/aluminum oxide composition is expected to have a non-stoichiometric ratio between the metal and metal oxide atoms. Further, the vapor deposition process controls the amount of oxygen in the composition, therefore it is expected that the composition would have more metal atoms than metal oxide atoms. The vapor deposition process comprises evaporation or sputtering, wherein the metal/metal oxide distribution is controlled by the amount of oxygen in the layer. The concentration of metal in the laser-absorbing layer is a result-effective variable. The metal is applied to the laser-absorbing layer based on the amount of oxygen in the composition. Therefore, the metal concentration is optimizable. “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In

re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)" (see MPEP 2144.05). It would have been obvious to one of ordinary skill in the art that the metal concentration of the laser-absorbing layer would be higher than the metal composition at both edges to improve the adhesion of the substrate to the laser-absorbing layer. Crawford also teaches that the composition comprises a polymeric substrate comprising polycarbonate (col. 5, line 3). Crawford teaches that compositions comprising metals that are vapor deposited on the layer preferably have polymeric substrates (col. 4, lines 61-67 and col. 5, lines 1-12). Among the preferred polymers is polycarbonate as in instant claim 25. It would have obvious to one of ordinary skill in the art to use the aluminum/aluminum oxide composition of Crawford in the radiation-sensitive layer of Teng because the aluminum/aluminum oxide composition provides good adhesion of the substrate to the radiation-sensitive layers as taught by Crawford (col. 1, lines 58-67 and col. 2, lines 1-3). Further, it would have been obvious to one of ordinary skill in the art to use the polycarbonate coated substrate of Crawford in the composition of Teng to form a substrate that is compatible with aluminum/aluminum oxide coatings as taught by Crawford.

8. Claims 1 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teng (above) in view of Crawford (above) as evidenced by Nishida et al., U.S. Patent No. 5,417,164.

Teng and Crawford teach a lithographic printing plate comprising a radiation-sensitive layer (laser-absorbing layer) with an aluminum/aluminum oxide composition as

relied upon above. Teng also teaches that the radiation-sensitive layer (coating layer) comprises at least one polyfunctional vinyl ether or epoxy monomer (or oligomer) (see col. 9, lines 12-15). Teng does not teach that the epoxy oligomer comprises silicon. However, it would have been obvious to one of ordinary skill in the art to use a silicon epoxy polymer in the radiation-sensitive layer (coating layer) because silicon polymers, such as a silicon epoxy polymers and silicon acrylate polymers increase ink-repelling properties of the radiation-sensitive layer as evidenced by Nishida (col. 6, lines 60-67 and col. 7, lines 1-12).

Response to Arguments

9. Applicant's arguments filed 7/3/2008 have been fully considered but they are not persuasive.

10. Applicant argues that the combination of Teng and Crawford does not teach "wherein the concentration ratio of the metal to metal oxide within the laser-absorbing layer is higher than the concentration ratio of the metal to metal oxide at both edges of the laser-absorbing layer so that more energy is absorbed from the laser than what would be absorbed without a gradient of concentration ratios."

The recitation, "so that more energy is absorbed from the laser than what would be absorbed without a gradient of concentration ratios", is intended use and adds no positive recitation to the claim.

11. Applicant argues that applying Teng's teaching to Crawford's vapor deposition would not result in the claimed gradient.

Examiner disagrees. Crawford teaches vapor deposition which comprises dispersing the metal/metal oxide particles in an uneven distribution throughout the layer to form a gradient dispersion. This process is usually performed by evaporation or sputtering. Therefore, the layer comprising the aluminum/aluminum oxide composition is expected to have a non-stoichiometric ratio between the metal and metal oxide atoms. Since the deposited amount will have an uneven distribution, it would be expected that the non-stoichiometric ratio between the metal and metal oxide would be uneven, thus forming a gradient.

12. Applicant argues that Crawford does not teach oxygen-control for needing less energy for ablation.

Crawford may not specifically teach oxygen control for needing less energy for ablation, however the limitation "needing less energy for ablation" is intended use and does not add positive recitation to the claim. The limitation is not given any patentable weight.

13. Applicant argues that one of ordinary skill in the art would expect that more energy would be required to ablate a layer having strong adhesion to the substrate than that required to ablate a layer having weaker adhesion to the substrate.

Crawford teaches a vapor deposition process of an aluminum/aluminum oxide composition, wherein the composition may be deposited onto different layers (see col. 1, lines 66-68 and col. 2, lines 1-3). The Crawford reference offers a basic teaching of Al/AlO coating by vapor deposition that can be used in any layer, including a laser ablatable layer. As for more energy being required because of stronger adhesion, the

adhesion is not related to the amount of energy needed to ablate the layers because the overcoat layer is insensitive to radiation and is removed during development. Crawford teaches the aluminum/aluminum oxide layer is applied by vapor deposition to form a gradient solid dispersion. According to page 9, lines 6-11, it is the structure of the laser absorbing layer and not the amount of adhesion that may accelerate the imaging process and increase sensitivity. Crawford teaches the aluminum/aluminum oxide layer with a gradient solid dispersion. Therefore, the laser absorbing layer of Crawford would have an accelerated imaging process and increased sensitivity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Connie P. Johnson whose telephone number is 571-272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Connie P. Johnson
Examiner
Art Unit 1752

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795